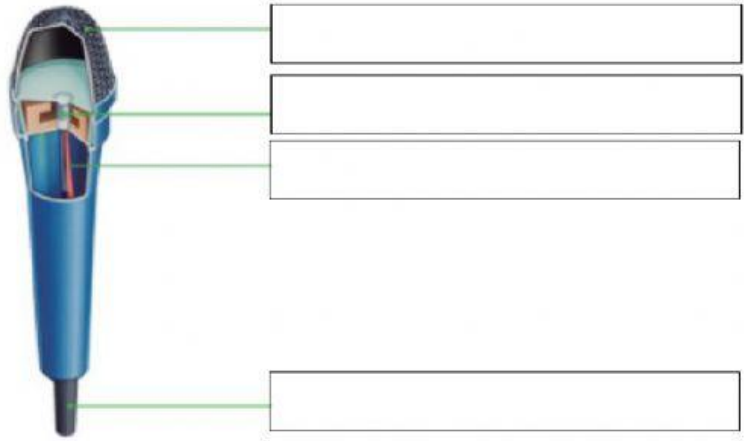
Read about microphones. Then, label the diagram:

Sound waves enter the microphone and cause the **cone** to vibrate. The cone is attached to a **magnet** inside a **wire coil**. As the cone vibrates, the magnet vibrates inside the coil, producing an electric current. The current travels down a **wire** to a recording device or speaker.



Answer the questions:

- What mixtures can an electromagnet be used to separate?

- How many poles does a bar magnet have?

- What two things can happen when two magnets are moved together?

- How can we identify a magnet?

- What is the Earth's magnetic field called?

- What does the Earth's magnetic field protect us from?

Order the sentences to describe how an electric bell works:

- [ ] Then an electric current flows around the circuit producing a magnetic field in the electromagnet.
- [ ] As the hammer moves back into its original position, the circuit is completed again.
- [ ] First the switch is closed and the circuit is completed.
- [ ] This magnetic field attracts the hammer, which is made of iron.
- [ ] The hammer is pulled towards the magnet. This movement breaks the circuit.

TRUE or FALSE? Correct the false sentences.

- A compass needle is a bar magnet.

- The electric current in an electric bell switches on and off rapidly.

- A Maglev is a train that is powered by thermal energy.

- Speakers and microphones both contain bar magnets.

Answer the questions:

- If we move two magnets away from each other, does the magnetic force between them get stronger or weaker?

_____

_____

- If a magnet is broken into little pieces, does each piece continue to produce a magnetic field?

_____

_____

- What materials do we need to make an electromagnet?

_____

_____